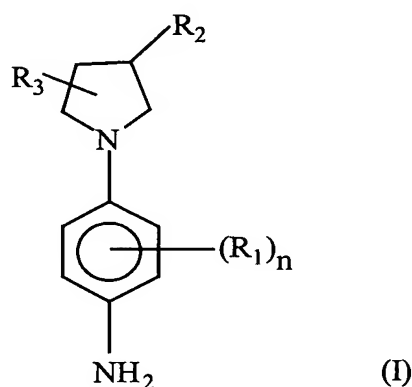


WHAT IS CLAIMED IS:

1. A dyeing composition for dyeing keratinous fibres comprising, in an appropriate dyeing medium, at least one cationic tertiary para-phenylenediamine comprising a pyrrolidine ring, and at least one cationic direct dye comprising at least one heterocyclic group.
2. The composition of claim 1, wherein the cationic tertiary para-phenylenediamine corresponds to formula I:



in which

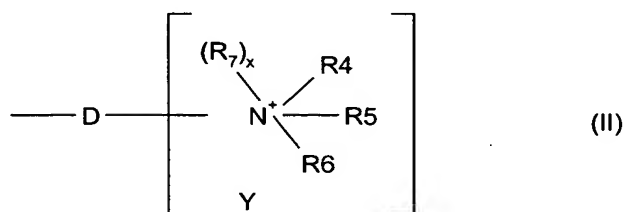
n varies from 0 to 4, it being understood that when n is greater than or equal to 2, then the radicals R_1 may be identical or different,

R_1 represents a halogen atom; a saturated or unsaturated, aliphatic or alicyclic, C_1 - C_6 hydrocarbon chain, it being possible for the chain to contain one or more oxygen, nitrogen, silicon or sulphur atoms or an SO_2 group, and it being possible for the chain to be substituted with one or more hydroxyl or amino radicals; an onium radical Z, the radical R_1 not containing a peroxide bond, or diazo, nitro or nitroso radicals,

R_2 represents an onium radical Z or a radical $-X-C=NR_8-NR_9R_{10}$ in which X represents an oxygen atom or a radical $-NR_{11}$ and R_8 , R_9 , R_{10} and R_{11} represent a hydrogen atom, a C_1 - C_4 alkyl radical or a C_1 - C_4 hydroxyalkyl radical,

R_3 represents a hydrogen atom or a hydroxyl radical.

3. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that n is equal to 0.
4. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that n is equal to 1 and R₁ is chosen from the group consisting of a halogen atom; a saturated or unsaturated, aliphatic or alicyclic, C₁-C₆ hydrocarbon chain; it being possible for one or more carbon atoms to be replaced by an oxygen, nitrogen, silicon or sulphur atom, or by an SO₂ group, the radical R₁ not containing a peroxide bond, or diazo, nitro or nitroso radicals.
5. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R₁ is chosen from chlorine, bromine, C₁-C₄ alkyl, C₁-C₄ hydroxyalkyl, C₁-C₄ aminoalkyl, C₁-C₄ alkoxy or C₁-C₄ hydroxyalkoxy radicals.
6. The composition of claim 5, wherein the cationic tertiary para-phenylenediamine is such that R₁ is chosen from a methyl, hydroxymethyl, 2-hydroxyethyl, 1,2-dihydroxyethyl, methoxy, isopropoxy or 2-hydroxyethoxy radical.
7. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R₂ represents the onium radical Z corresponding to formula (II)



in which

D is a single bond of a linear or branched C₁-C₁₄ alkylene chain which may contain one or more heteroatoms chosen from oxygen, sulphur or nitrogen, and which may be substituted with one or more hydroxyl, C₁-C₆ alkoxy or amino radicals and which may carry one or more ketone functional groups;

R₄, R₅ and R₆, taken separately, represent a C₁-C₁₅ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ amidoalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆

aminoalkyl radical; a C₁-C₆ aminoalkyl radical in which the amine is mono- or di-substituted with a C₁-C₄ alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; or

R₄, R₅ and R₆ together, in pairs, form, with the nitrogen atom to which they are attached, a 4-, 5-, 6- or 7-membered saturated carbon ring which may contain one or more heteroatoms, it being possible for the cationic ring to be substituted with a halogen atom, a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxy-alkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a carboxyl radical, a (C₁-C₆)alkylcarbonyl radical, a thio (-SH) radical, a C₁-C₆ thioalkyl (-R-SH) radical, a (C₁-C₆)alkylthio radical, an amino radical, an amino radical which is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical;

R₇ represents a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ carbamyl-alkyl radical; a C₁-C₆ trifluoroalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a (C₁-C₆)alkyl-carboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphinyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylsulphonamido(C₁-C₆)alkyl radical;

x is 0 or 1,

when x = 0, then the linking arm is attached to the nitrogen atom carrying the radicals R₄ to R₆;

when x = 1, then two of the radicals R₄ to R₆ form, together with the nitrogen atom to which they are attached, a 4-, 5-, 6- or 7-membered saturated ring and D is linked to the carbon atom of the saturated ring;

Y is a counter-ion.

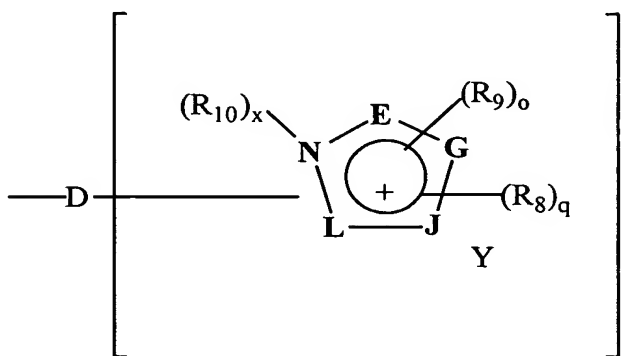
8. The composition of claim 7, wherein the cationic tertiary para-phenylenediamine is such that R₂ corresponds to formula II in which x is equal to 0 and R₄, R₅ and R₆ separately are preferably chosen from a C₁-C₆ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical, a (C₁-C₆)alkoxy(C₁-C₄)alkyl radical, a C₁-C₆ amidoalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, or R₄ with R₅ form together an azetidine ring, a pyrrolidine, piperidine, piperazine or morpholine ring, R₆ being chosen in this case from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ aminoalkyl radical, an aminoalkyl radical which is mono- or di-substituted with a (C₁-C₆)alkyl radical, a (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carbamylalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a (C₁-C₆)alkyl carboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical.

9. The composition of claim 7, wherein the cationic tertiary para-phenylenediamine is such that R₂ corresponds to formula II in which x is equal to 1 and R₇ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxy-alkyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical whose amine is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or a (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carbamylalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; R₄ with R₅ together form an azetidine, pyrrolidine, piperidine, piperazine or morpholine ring, R₆ being chosen in this case from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyl alkyl radical; a C₁-C₆ aminoalkyl radical; a C₁-C₆ aminoalkyl radical whose amine is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carbamylalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical.

10. The composition of claim 7, wherein the cationic tertiary para-phenylenediamine is such that D is a single bond or an alkylene chain which may be substituted.

11. The composition of claim 7, wherein the cationic tertiary para-phenylenediamine is such that R_2 is a trialkylammonium radical.

12. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R_2 represents the onium radical Z corresponding to formula III



(III)

in which

D is a single bond or a linear or branched C_1 - C_{14} alkylene chain which may contain one or more heteroatoms chosen from oxygen, sulphur or nitrogen, and which may be substituted with one or more hydroxyl, C_1 - C_6 alkoxy or amino radicals, and which may carry one or more ketone functional groups;

the vertices E, G, J, L, which are identical or different, represent a carbon, oxygen, sulphur or nitrogen atom to form a pyrrole, pyrazole, imidazole, triazole, oxazole, isooxazole, thiazole, isothiazole ring,

q is an integer between 0 and 4 inclusive;

is an integer between 0 and 3 inclusive;

$q+o$ is an integer between 0 and 4;

the radicals R_8 , which are identical or different, represent a halogen atom, a hydroxyl radical, a C_1 - C_6 alkyl radical, a C_1 - C_6 monohydroxyalkyl radical, a C_2 - C_6 polyhydroxyalkyl radical, a C_1 - C_6 alkoxy radical, a tri(C_1 -

C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a carboxyl radical, a C₁-C₆ alkylcarbonyl radical, a thio radical, a C₁-C₆ thioalkyl radical, a (C₁-C₆)alkylthio radical, an amino radical, an amino radical which is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ monohydroxyalkyl radical or a C₂-C₆ polyhydroxyalkyl radical; it being understood that the radicals R₈ are carried by a carbon atom,

the radicals R₉, which are identical or different, represent a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical, a C₁-C₆ carbamylalkyl radical, a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical, a benzyl radical; it being understood that the radicals R₉ are carried by a nitrogen,

R₁₀ represents a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical whose amine is substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylsulphonamido(C₁-C₆)alkyl radical;

x is 0 or 1

when x = 0, the linking arm D is attached to the nitrogen atom,

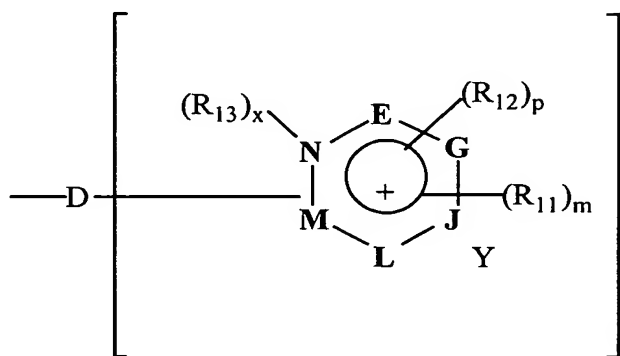
when x = 1, the linking arm D is attached to one of the vertices E, G, J or L,

Y is a counter-ion.

13. The composition of claim 12, wherein the cationic tertiary para-phenylenediamine is such that the vertices E, G, J and L form an imidazole ring.

14. The composition of claim 12, wherein the cationic tertiary para-phenylenediamine is such that x is equal to 0, D is a single bond or an alkylene chain which may be substituted.

15. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that R₂ represents an onium radical Z corresponding to formula IV



(IV)

in which:

D is a single bond or a linear or branched C₁-C₁₄ alkylene chain which may contain one or more heteroatoms chosen from an oxygen, sulphur or nitrogen atom, and which may be substituted with one or more hydroxyl, C₁-C₆ alkoxy or amino radicals, and which may carry one or more ketone functional groups;

the vertices E, G, J, L and M, which are identical or different, represent a carbon, oxygen, sulphur or nitrogen atom to form a ring chosen from the pyridine, pyrimidine, pyrazine, triazine and pyridazine rings;

p is an integer between 0 and 3 inclusive;

m is an integer between 0 and 5 inclusive;

p+m is an integer between 0 and 5;

the radicals R₁₁, which are identical or different, represent a halogen atom, a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical,

a C₂-C₆ polyhydroxyalkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a carboxyl radical, a C₁-C₆ alkylcarbonyl radical, a thio radical, a C₁-C₆ thioalkyl radical, a (C₁-C₆)alkylthio radical, an amino radical, an amino radical which is substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ monohydroxyalkyl radical or a C₂-C₆ polyhydroxyalkyl radical; it being understood that the radicals R₁₁ are carried by a carbon atom,

the radicals R₁₂, which are identical or different, represent a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical, a C₁-C₆ carbamylalkyl radical, a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical, a benzyl radical; it being understood that the radicals R₁₂ are carried by a nitrogen,

R₁₃ represents a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; an aryl radical; a benzyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical whose amine is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carboxyalkyl radical; a C₁-C₆ carbamylalkyl radical; a C₁-C₆ trifluoroalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a C₁-C₆ sulphonamidoalkyl radical; a (C₁-C₆)alkylcarboxy(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylsulphonyl(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylsulphonamido(C₁-C₆)alkyl radical;

x is 0 or 1

when x = 0, the linking arm D is attached to the nitrogen atom,

when x = 1, the linking arm D is attached to one of the vertices E, G, J, L or M,

Y is a counter-ion.

16. The composition of claim 15, wherein the vertices E, G, J, L and M form, with the nitrogen of the ring, a ring chosen from pyridine and pyrimidine rings.
17. The composition of claim 15, wherein the cationic tertiary para-phenylenediamine is such that x is equal to 0 and R₁₁ is chosen from a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a C₁-C₆ alkylcarbonyl radical, an amino radical, an amino radical which is mono- or di-substituted with a (C₁-C₆)alkyl, a (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ monohydroxyalkyl radical or a C₂-C₆ polyhydroxyalkyl radical and R₁₂ is chosen from a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical, a C₁-C₆ carbamylalkyl radical.
18. The composition of claim 15, wherein the cationic tertiary para-phenylenediamine is such that x is equal to 1 and R₁₃ is chosen from a C₁-C₆ alkyl radical; a C₁-C₆ monohydroxyalkyl radical; a C₂-C₆ polyhydroxyalkyl radical; a C₁-C₆ aminoalkyl radical, a C₁-C₆ aminoalkyl radical whose amine is mono- or di-substituted with a (C₁-C₆)alkyl radical, a (C₁-C₆)alkylcarbonyl radical, an amido radical, a (C₁-C₆)alkylsulphonyl radical; a C₁-C₆ carbamylalkyl radical; a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical; a (C₁-C₆)alkylcarbonyl(C₁-C₆)alkyl radical; an N-(C₁-C₆)alkylcarbamyl(C₁-C₆)alkyl radical; R₁₁ is chosen from a hydroxyl radical, a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a C₁-C₆ alkoxy radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, an amido radical, a C₁-C₆ alkylcarbonyl radical, an amino radical, an amino radical which is mono- or di-substituted with a (C₁-C₆)alkyl, (C₁-C₆)alkylcarbonyl, amido or (C₁-C₆)alkylsulphonyl radical; and R₁₂ is chosen from a C₁-C₆ alkyl radical, a C₁-C₆ monohydroxyalkyl radical, a C₂-C₆ polyhydroxyalkyl radical, a tri(C₁-C₆)alkylsilane(C₁-C₆)alkyl radical, a (C₁-C₆)alkoxy(C₁-C₆)alkyl radical, a C₁-C₆ carbamylalkyl radical.
19. The composition of claim 15, wherein the cationic tertiary para-phenylenediamine is such that R₁₁, R₁₂ and R₁₃ are alkyl radicals which may be substituted.
20. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that the radical R₂ is the radical of formula -XP(O)(O-)OCH₂CH₂N⁺(CH₃)₃ where X

represents an oxygen atom or a radical $-NR_{14}$, R_{14} representing a hydrogen, a C_1 - C_4 alkyl radical or a hydroxyalkyl radical.

21. The composition of claim 2, wherein the cationic tertiary para-phenylenediamine is such that the radical R_2 is a guanidine radical of formula $-X-C=NR_8-NR_9R_{10}$, X represents an oxygen atom or a radical $-NR_{11}$, R_8 , R_9 , R_{10} and R_{11} representing a hydrogen, a C_1 - C_4 alkyl radical or a hydroxyalkyl radical.

22. The composition of claim 1, wherein the cationic tertiary para-phenylene is chosen from the group consisting of:

[1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride,

[1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecylammonium bromide

N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-dimethyl-guanidinium chloride

N-[1-(4-Aminophenyl)pyrrolidin-3-yl]guanidinium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl-(3-trimethylsilanylpropyl)ammonium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]-(trimethylammonium-hexyl)dimethylammonium dichloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]oxophosphorylcholine

{2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl} trimethylammonium chloride

1-{2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpyrrolidinium chloride

3-{3-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-ium chloride

1-{2-[1-(4-Aminophenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpiperidinium chloride

3-{3-[1-(5-trimethylsilanylethyl-4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-um chloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]trimethyammonium chloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyltetradecylammonium chloride

N'-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-N,N-dimethylguanidinium chloride

N-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]guanidinium chloride

3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyl-(3-trimethylsilanylpropyl)ammonium chloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-(trimethylammoniumhexyl)dimethylammonium dichloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]oxophosphorylcholine

{2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl} trimethylammonium chloride

1-{2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpyrrolidinium chloride

3-{3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]-propyl} 1-methyl-3H-imidazol-1-um chloride

1-{2-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yloxy]ethyl}-1-methylpiperidinium chloride

[1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]trimethylammonium chloride

3-[1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride

3-{3-[1-(4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yloxy]propyl}-1-methyl-3H-imidazol-1-um chloride

[1-(5-trimethylsilanylethyl-4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]trimethylammonium chloride

3-[1-(5-trimethylsilanylethyl-4-Amino-3-trimethylsilanylethylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride

1'-(4-Aminophenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride

1'-(4-Amino-3-methylphenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride

3-{[1-(4-Aminophenyl)pyrrolidin-3-ylcarbamoyl]methyl}-1-methyl-3H-imidazol-1-ium chloride

3-{[1-(4-Amino-3-methylphenyl)pyrrolidin-3-ylcarbamoyl]methyl}-1-methyl-3H-imidazol-1-ium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]ethyltrimethylammonium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]ethyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium iodide,

[1-(4-aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium bromide

[1-(4-aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium methosulphate

[1-(4-aminophenyl)pyrrolidin-3-yl]butyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]pentyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]heptyltrimethylammonium iodide

[1-(4-Aminophenyl)pyrrolidin-3-yl]octyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]decyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexadecyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyltrimethylammonium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyltrimethylammonium iodide.

23. The composition of claim 1, wherein the cationic tertiary para-phenylene is chosen from the group consisting of [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride;

[1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecylammonium bromide;

N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-dimethylguanidinium chloride

N-[1-(4-Aminophenyl)pyrrolidin-3-yl]guanidinium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride;

[1-(4-Aminophenyl)pyrrolidin-3-yl](2-hydroxyethyl)dimethylammonium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl-(3-trimethylsilylpropyl)ammonium chloride;

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]trimethylammonium chloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyltetradecylammonium chloride

N'-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-N,N-dimethylguanidinium chloride

N-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]guanidinium chloride

3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride

[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]dimethyl-(3-trimethylsilylpropyl)ammonium chloride

1'-(4-Aminophenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride

1'-(4-Amino-3-methylphenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride

3-{[1-(4-Aminophenyl)pyrrolidin-3-ylcarbonyl]methyl}-1-methyl-3H-imidazol-1-ium chloride

3-[[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]carbamoyl]methyl]-1-methyl-3H-imidazol-1-ium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilylpropyl)-3H-imidazol-1-ium chloride

3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-(3-trimethylsilylpropyl)-3H-imidazol-1-ium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]ethyltrimethylammonium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]ethyltrimethylammonium iodide

[1-(4-Aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium iodide,

[1-(4-aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium bromide

[1-(4-aminophenyl)pyrrolidin-3-yl]propyltrimethylammonium methanesulphate

[1-(4-aminophenyl)pyrrolidin-3-yl]butyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]pentyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]heptyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]octyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]decyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexadecyltrimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyltrimethylammonium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyltrimethylammonium iodide.

24. The composition of claim 1, wherein the cationic tertiary para-phenylene is chosen from the group consisting of [1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyltetradecylammonium bromide

N'-[1-(4-Aminophenyl)pyrrolidin-3-yl]-N,N-dimethylguanidinium chloride

N-[1-(4-Aminophenyl)pyrrolidin-3-yl]guanidinium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]dimethyl-(3-trimethylsilanylpropyl)ammonium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]-(trimethylammonium-hexyl)dimethylammonium dichloride

1'-(4-Aminophenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride

3-[1-(4-Amino-3-methylphenyl)pyrrolidin-3-yl]-1-(3-trimethylsilanylpropyl)-3H-imidazol-1-ium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]ethyl dimethylammonium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]ethyl dimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]propyl dimethylammonium iodide,

[1-(4-aminophenyl)pyrrolidin-3-yl]propyl dimethylammonium bromide

[1-(4-aminophenyl)pyrrolidin-3-yl]propyl dimethylammonium methosulphate

[1-(4-aminophenyl)pyrrolidin-3-yl]butyl dimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]pentyl dimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexyl dimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]heptyl dimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]octyl dimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]decyl dimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hexadecyl dimethylammonium iodide

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyl dimethylammonium chloride

[1-(4-aminophenyl)pyrrolidin-3-yl]hydroxyethyl dimethylammonium iodide.

25. The composition of claim 1, wherein the cationic tertiary para-phenylene is chosen from the group consisting of:

[1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride

3-[1-(4-Aminophenyl)pyrrolidin-3-yl]-1-methyl-3H-imidazol-1-ium chloride

[1-(4-Aminophenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride

1'-(4-Aminophenyl)-1-methyl-[1,3']bipyrrolidinyl-1-ium chloride.

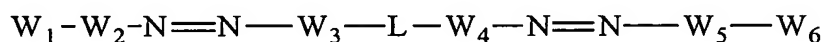
26. The composition of claim 1, wherein the cationic tertiary para-phenylene is chosen from the group consisting of:

[1-(4-Aminophenyl)pyrrolidin-3-yl]trimethylammonium chloride, and [1-(4-Aminophenyl)pyrrolidin-3-yl]-(2-hydroxyethyl)dimethylammonium chloride.

27. The composition of claim 1, wherein the cationic direct dye comprising at least one heterocyclic group is chosen from monoazo monocationic direct dyes, polyazo monocationic direct dyes, monoazo polycationic direct dyes and polyazo polycationic direct dyes.

28. The composition of claim 27, wherein the cationic direct dye comprising at least one heterocyclic group is chosen from dicationic diazo dyes, dicationic monoazo dyes and monocationic monoazo dyes.

29. The composition of claim 28, wherein the dye is a dicationic diazo dye of general formula Va

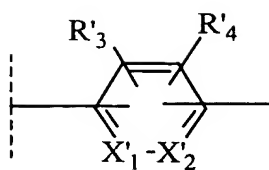


(Va)

in which

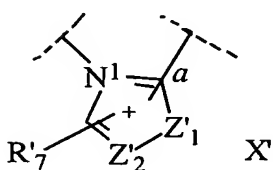
W_1 and W_6 represent, independently of each other, a radical $NR'_1R'_2$

W_2 and W_5 represent, independently of each other, a carbon-based aromatic, pyridine or pyridazinyl group of formula (II)

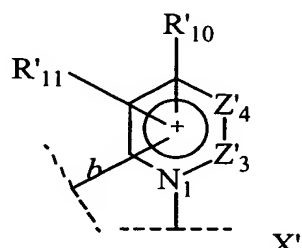


(II)

W₃ and W₄, represent, independently of each other, a heteroaromatic radical represented by formulae (A) and (B) below:



(A)



(B)

in which

X'₁ represents a nitrogen atom or a radical CR'₅,

X'₂ represents a nitrogen atom or a radical CR'₆,

Z'₁ represents an oxygen or sulphur atom or a radical NR'₈,

Z'₂ represents a nitrogen atom or a radical CR'₉,

Z'₃ represents a nitrogen atom or a radical CR'₁₂,

Z'₄ represents a nitrogen atom or a radical CR'₁₃,

N¹ of the 5-membered ring of formula (A) is linked to the group L and the bond *a* of the same 5-membered ring is linked to the azo group of formula Va,

the bond *b* of the 6-membered ring of formula (B) is linked to the azo group of formula (Va) and N¹ of the 6-membered ring of formula (B) is linked to the group L,

L, R'₁, R'₂, R'₃, R'₄, R'₅, R'₆, R'₇, R'₉, R'₁₀, R'₁₁, R'₁₂ and R'₁₃ represent, together or independently of each other, a linear or branched C₁-C₁₆ hydrocarbon-

based chain, which can form one or more 3- to 6-membered carbon-based rings, and which may be saturated or unsaturated, one or more carbon atoms of the carbon-based chain of which may be replaced with an oxygen, nitrogen or sulphur atom or with an SO₂ group, and the carbon atoms of which may be, independently of each other, substituted with one or more halogen atoms; R'₁, R'₂, R'₃, R'₄, R'₅, R'₆, R'₇, R'₉, R'₁₀, R'₁₁, R'₁₂ and R'₁₃ can represent hydrogen; L, R'₁, R'₂, R'₃, R'₄, R'₅, R'₆, R'₇, R'₉, R'₁₀, R'₁₁, R'₁₂ and R'₁₃ not comprising a peroxide bond or diazo or nitroso radicals, and L is a divalent radical,

R'₈ represents a linear or branched C₁-C₈ alkyl radical, optionally substituted with one or more radicals chosen from hydroxyl, C₁-C₂ alkoxy, C₂-C₄ (poly)hydroxyalkoxy, amino, C₁-C₂ (di)alkylamino, carboxyl or sulphonic radicals; an optionally substituted phenyl radical,

R'₇ with R'₉, R'₁₀ with R'₁₁ and R'₁₂ with R'₁₃ may form a carbon-based aromatic ring, such as a phenyl,

X is an organic or mineral anion.

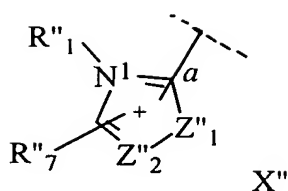
30. The composition of claim 28, wherein the dye is a dicationic diazo dye of general formula Vb



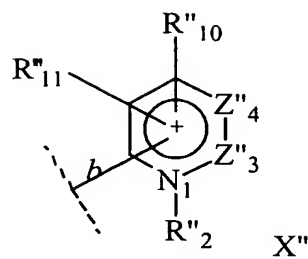
(Vb)

in which

W₇ and W₉ represent independently of each other a heteroaromatic radical represented by formulae (C) and (D) below:



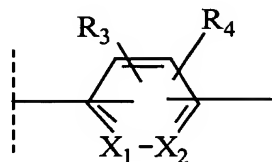
(C)



(D)

W₈ represents a carbon-based aromatic, pyridine or pyridazinyl group of formula

(E)



(E)

in which formulae (C), (D), (E):

X''₁ represents a nitrogen atom or a radical CR''₅

X''₂ represents a nitrogen atom or a radical CR''₆

Z''₁ represents an oxygen or sulphur atom or a radical NR''₈,

Z''₂ represents a nitrogen atom or a radical CR''₉,

Z''₃ represents a nitrogen atom or a radical CR''₁₂,

Z''₄ represents a nitrogen atom or a radical CR''₁₃,

the bond *a* of the 5-membered cationic ring of formula (C) is linked to the azo group of formula (Vb),

the bond *b* of the 6-membered cationic ring of formula (D) is linked to the azo group of formula (Vb)

R''₃, R''₄, R''₅, R''₆, R''₇, R''₉, R''₁₀, R''₁₁, R''₁₂ and R''₁₃, represent, together or independently of each other, a hydrogen atom, a linear or branched, saturated or unsaturated C₁-C₁₆ hydrocarbon-based chain, which can form one or more 3- to 6-membered carbon-based rings, one or more carbon atoms of the carbon-based chain of which may be replaced with an

oxygen, nitrogen or sulphur atom or with an SO₂ group, and the carbon atoms of which may be, independently of each other, substituted with one or more halogen atoms; R"₃, R"₄, R"₅, R"₆, R"₇, R"₉, R"₁₀, R"₁₁, R"₁₂ and R"₁₃ not comprising a peroxide bond or diazo or nitroso radicals,

R"₇ with R"₉, R"₁₀ with R"₁₁ and R"₁₂ with R"₁₃ can form a carbon-based aromatic ring, such as a phenyl,

X" is an organic or mineral anion.

31. The composition of claim 30, wherein the dye is selected from the group consisting of:

1,3-dimethyl-2-[4-(1,3-dimethyl(imidazol-1-ium)-2-ylazo)phenylazo]imidazol-1-ium.

1,4-dimethyl-3-[4-(1,4-dimethyl(triazol-2-ium)-3-ylazo)phenylazo]triazol-2-ium.

1-methyl-2-[4-(1-methyl(pyridin-1-ium)-2-ylazo)phenylazo]pyridin-1-ium.

1-methyl-3-[4-(1-methyl(pyridin-1-ium)-3-ylazo)phenylazo]pyridin-1-ium.

1,3-dimethyl-2-[4-(3-methyl(thiazol-3-ium)-2-ylazo)phenylazo]imidazol-1-ium.

1,4-dimethyl-3-[4-(3-methyl(thiazol-3-ium)-2-ylazo)phenylazo]triazol-2-ium.

1,3-dimethyl-2-[4-(1,4-dimethyl(triazol-2-ium)-3-ylazo)phenylazo]imidazol-1-ium.

1-methyl-2-[4-(3-methyl(thiazol-3-ium)-2-ylazo)phenylazo]pyridin-1-ium.

1-methyl-3-[4-(3-methyl(thiazol-3-ium)-2-ylazo)phenylazo]pyridin-1-ium.

1,3-dimethyl-2-[4-(1-methyl(pyridin-1-ium)-2-ylazo)phenylazo]imidazol-1-ium.

1,4-dimethyl-3-[4-(1-methyl(pyridin-1-ium)-2-ylazo)-phenylazo]-triazol-2-ium.

1,3-dimethyl-2-[4-(1-(2-hydroxyethyl)(pyridin-1-ium)-2-ylazo)phenylazo]imidazol-1-ium.

1,4-dimethyl-3-[4-(1-(2-hydroxyethyl)(pyridin-1-ium)-2-ylazo)phenylazo]triazol-2-ium.

1,3-dimethyl-2-[4-(1-methyl(pyridin-1-ium)-3-ylazo)phenylazo]imidazol-1-ium.

1,4-dimethyl-3-[4-(1-methyl(pyridin-1-ium)-3-ylazo)phenylazo]triazol-2-ium.

1,3-dimethyl-2-[4-(1-(2-hydroxyethyl)(pyridin-1-ium)-3-ylazo)phenylazo]imidazol-1-ium.

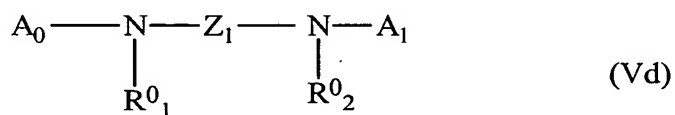
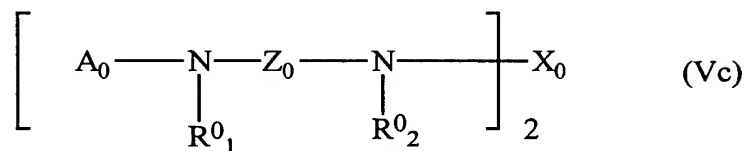
1,4-dimethyl-3-[4-(1-(2-hydroxyethyl)(pyridin-1-ium)-3-ylazo)phenylazo]triazol-2-ium.

1,3-dimethyl-2-[4-(1,3-dimethyl(imidazol-1-ium)-2-ylazo)-3-methoxyphenylazo]imidazol-1-ium.

1,3-dimethyl-2-[4-(1,4-dimethyl(triazol-2-ium)-3-ylazo)-3-methoxyphenylazo]imidazol-1-ium.

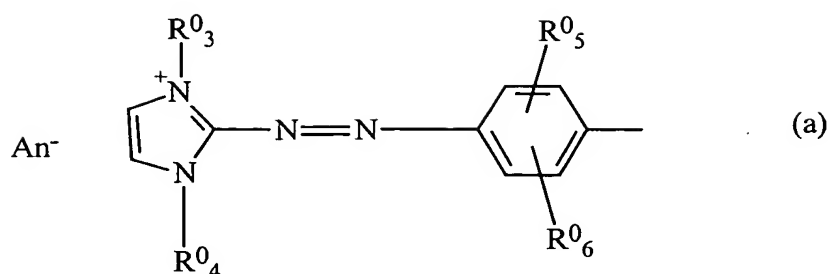
1,3-dimethyl-2-[4-(1-methyl(pyridin-1-ium)-2-ylazo)-3-methoxyphenylazo]imidazol-1-ium.

32. Composition according to Claim 29, in which the dye is a dicationic dye of formula (Vc) or (Vd)



in which formula (Vc) or (Vd):

A_0 and A_1 , independently of each other, denote a radical of formula (a) below



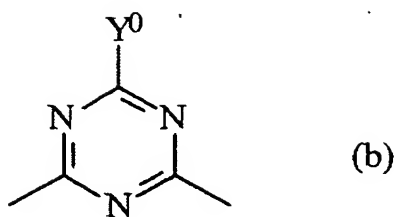
Z_0 denotes an aliphatic or aromatic radical,

Z_1 denotes an alkyl radical,

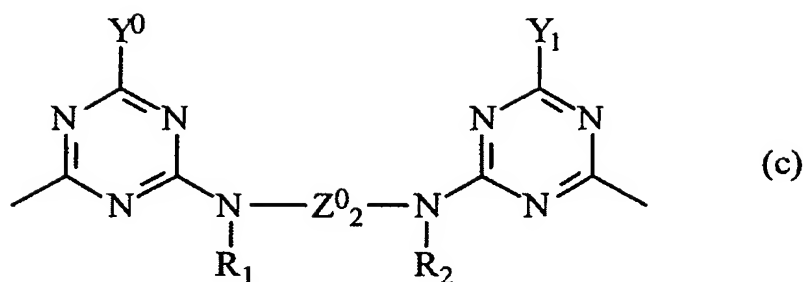
R^0_1 and R^0_2 , independently of each other, denote a hydrogen atom, or a (C_1 - C_4)alkyl radical or a (C_1 - C_4)alkyl radical substituted with one or more halogen atoms, a hydroxyl, carboxyl or cyano radical, a (C_1 - C_4)alkoxy radical, a (C_1 - C_4)alkoxy radical substituted with one or more hydroxyl or (C_1 - C_4)alkoxy radicals, an amino, alkylamino, dialkylamino, aminocarbonyl, phenyl, phenoxy or phenylaminocarbonyl radical, in which the phenyl radical is unsubstituted or substituted with a (C_1 - C_4)alkyl, (C_1 - C_4)alkoxy or phenoxy radical,

or alternatively R^0_1 and R^0_2 form, together with the two nitrogen atoms which bear them and the radical Z_0 , a piperazine ring,

X_0 is a bridging radical chosen from: $-\text{CO}-$; $-\text{CO}-\text{CH}_2-\text{CH}_2-\text{CO}-$; $-\text{CO}-\text{CO}-$; 1,4-dicarbonylphenyl; $-\text{CH}_2-\text{CH}_2-$; or a triazine of formula (b) or (c) below:



or



in which:

Y^0 and Y_1 , independently of each other, denote a halogen atom, or a hydroxyl, amino, monoalkylamino, dialkylamino, 1-piperidino, morpholino or 1-piperazino radical, the piperazino radical being unsubstituted or substituted on the nitrogen atom not attached to the triazine ring with a (C₁-C₄)alkyl radical, the said alkyl radicals being unsubstituted or substituted with hydroxyl, amino, mono-(C₁-C₄)alkylamino or di-(C₁-C₄)alkylamino,

Z^0_2 denotes a (C₂-C₈)alkylene radical or forms, with the two adjacent nitrogen atoms and the radicals R_1 and R_2 , a piperazine ring,

in the radical of formula (a),

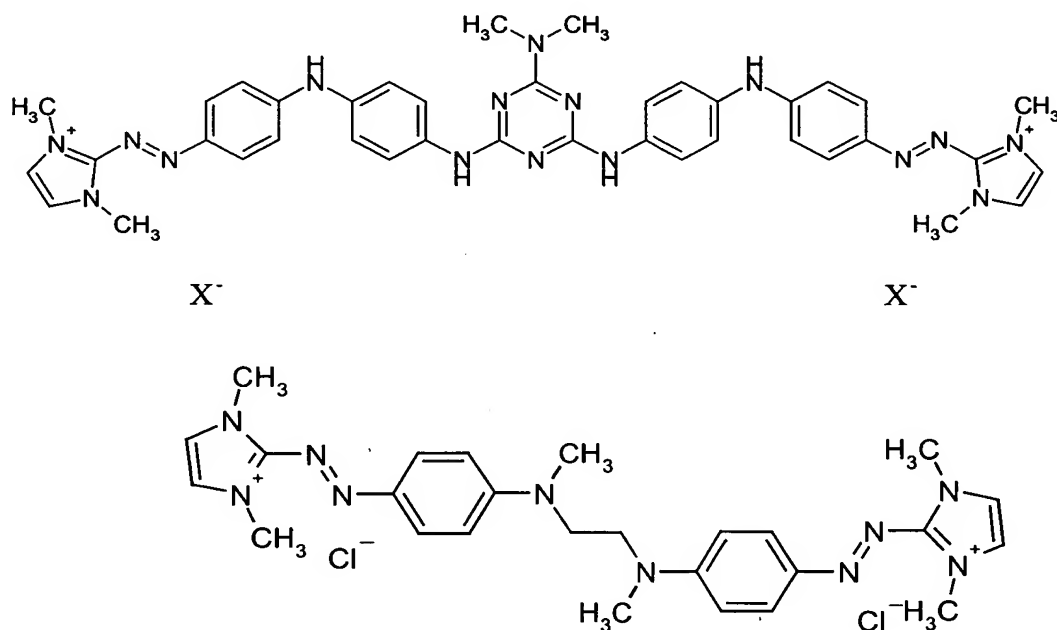
R^0_3 and R^0_4 , independently of each other, denote a hydrogen atom, or a (C₁-C₄)alkyl radical, a (C₁-C₄)alkyl radical substituted with one or more halogen atoms, a hydroxyl, carboxyl or cyano radical, a (C₁-C₄)alkoxy radical, a (C₁-C₄)alkoxy radical substituted with a hydroxyl or (C₁-C₄)alkoxy radical, an amino, alkylamino, dialkylamino, aminocarbonyl, phenyl, phenoxy or phenylaminocarbonyl radical, in which the phenyl

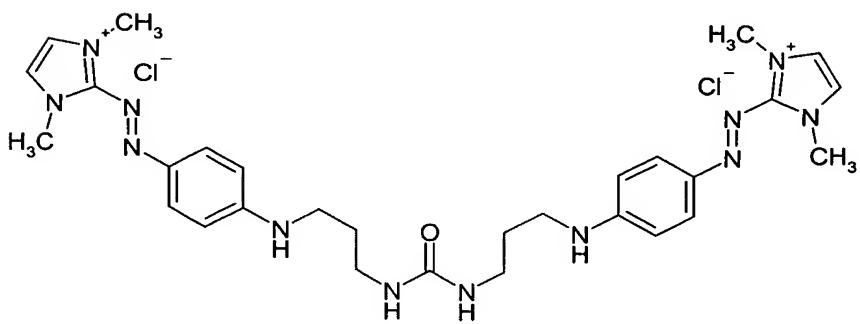
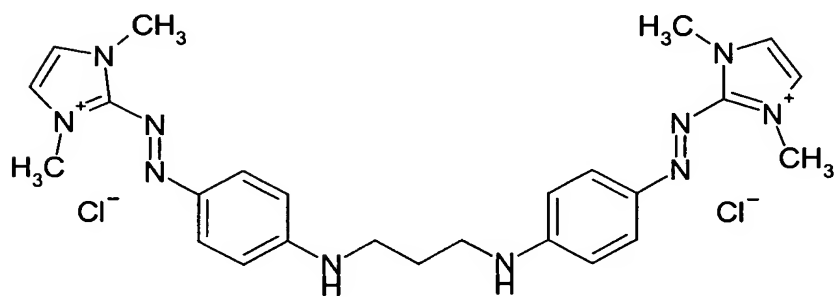
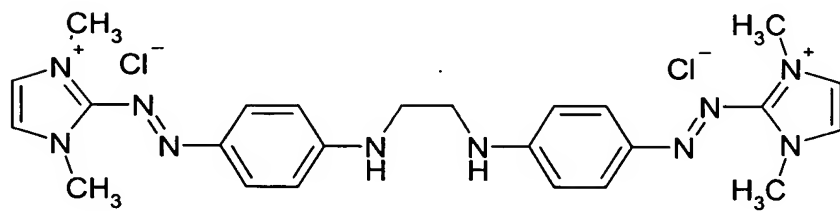
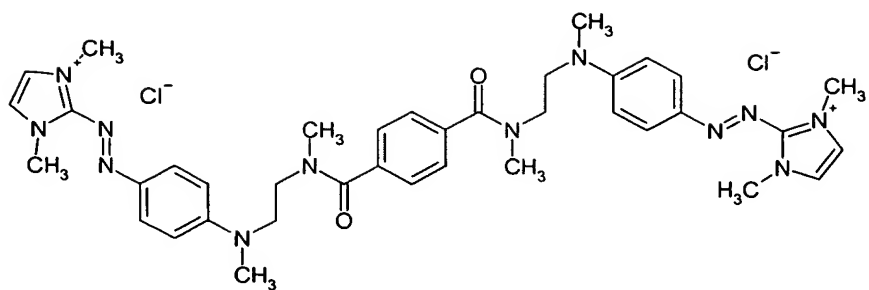
radical is unsubstituted or substituted with a (C₁-C₄)alkyl, (C₁-C₄)alkoxy or phenoxy radical,

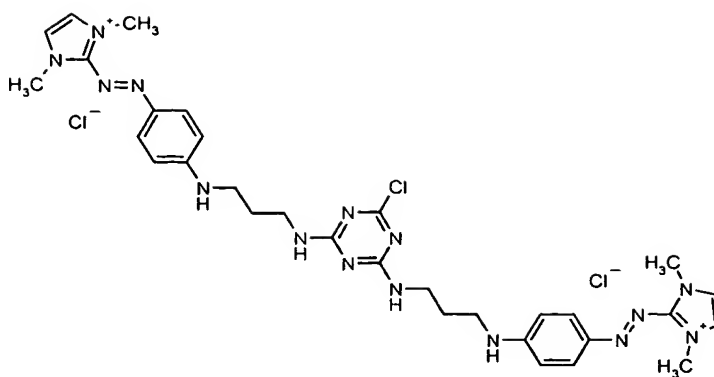
R⁰₅ and R⁰₆, independently of each other, denote a hydrogen atom, a (C₁-C₄)alkyl or (C₁-C₄)alkoxy radical optionally substituted with a hydroxyl, carboxyl, halogen or cyano radical, (C₁-C₄)alkoxy optionally substituted with a hydroxyl or (C₁-C₄)alkoxy radical, an amino, alkylamino, dialkylamino, aminocarbonyl, phenyl, phenoxy or phenylaminocarbonyl radical, in which the phenyl radical is unsubstituted or substituted with a (C₁-C₄)alkyl, (C₁-C₄)alkoxy or phenoxy radical,

An⁻ denotes an anion.

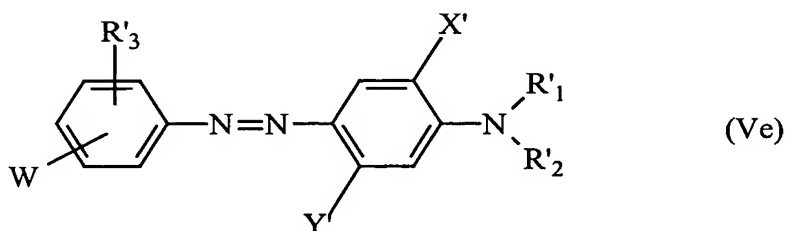
33. The composition of claim 32, wherein the dye of formula (Vc) is chosen from the compounds having the following formulae:







34. The composition of claim 29, wherein the dye is a dicationic dye of formula (Ve)



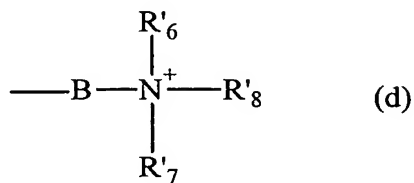
in which formula (Ve),

the number of cationic charges is two,

X' and Y', independently of each other, denote hydrogen, halogen, (C₁-C₄)alkyl, (C₁-C₄)alkoxy, (C₁-C₄)alkylcarbonylamino, arylcarbonylamino, ureido or arylureido,

R'₁ denotes hydrogen, a substituted alkyl or aryl radical, an unsubstituted alkyl or aryl radical, or has the same meaning as R'₂

R'₂ is a radical of formula (d) below:



in which:

B denotes a linear or branched alkylene radical,

R'₆ denotes hydrogen or substituted or unsubstituted alkyl,

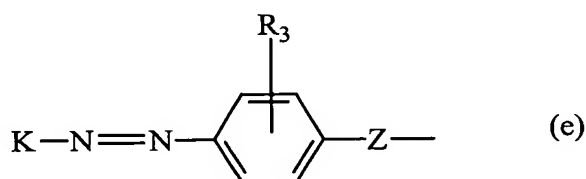
R'₇ and R'₈, independently of each other, denote substituted or unsubstituted alkyl,

R'₆ and R'₇, together with the nitrogen, form a substituted or unsubstituted 5-, 6- or 7-membered ring, which may contain other heteroatoms, or alternatively

R'₆ and R'₇ and R'₈ together form a pyridinium ring,

R'₃ denotes hydrogen, halogen, (C₁-C₄)alkyl or (C₁-C₄)alkoxy,

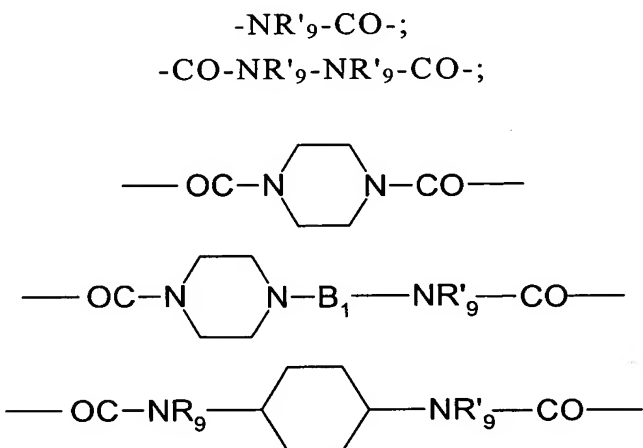
W is a radical of formula (e) below:

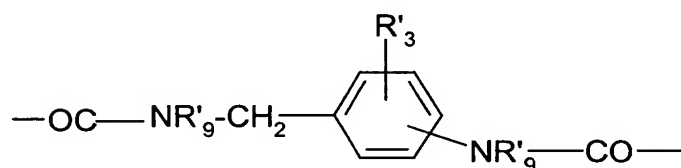
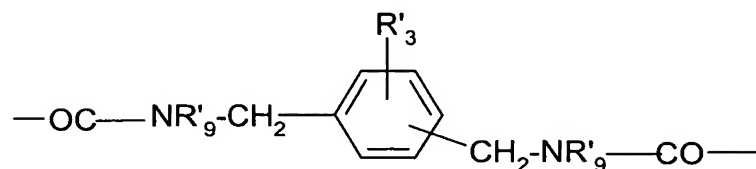
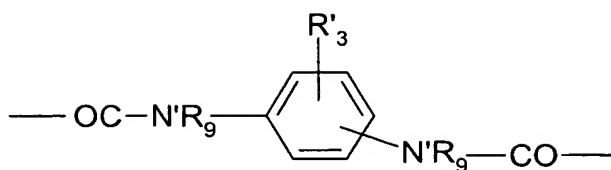


in which:

K is a coupling radical,

Z denotes a bridging radical chosen from the radicals of formulae:





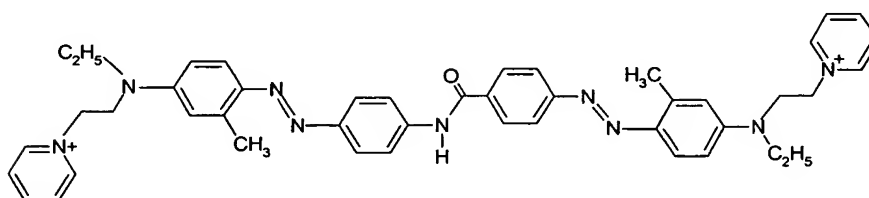
or alternatively



and in which R'₉ denotes hydrogen, substituted or unsubstituted (C₂-C₄)alkylene, the alkylene radical being linear or branched and possibly being interrupted with one or more groups chosen from:

-NR'₉-, -O-, -S-.

35. The composition of claim 34, wherein the dye of formula (Vc) is the following dye:



2X⁻.

36. The composition of claim 28, wherein the dye is a dicationic monoazo dye of formula (Vf) or (Vg)

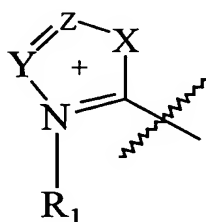




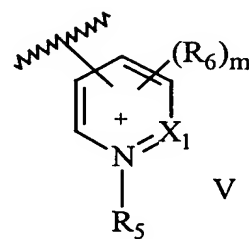
in which formulae

n is equal to 0 or 1,

Z_1 represents a 5- or 6-membered cationic heteroaromatic radical of formula (III) or (IV):



V (III)



V (IV)

in which

X represents NR_3 , S or O, Z represents CR_2 or N and Y represents CR_4 or N with the following conditions:

when X is NR_3 or O and Z is CR_2 , then Y is CR_4 or N,

when X is S, then Z is N or Y is N

when X is S and Z is N, then Y is CR_4

X_1 represents CR_6 or N,

m is an integer equal to 0,1,2 or 3,

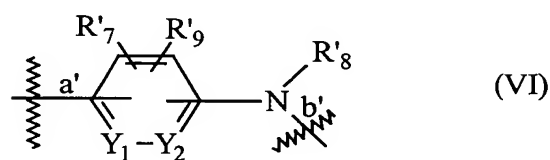
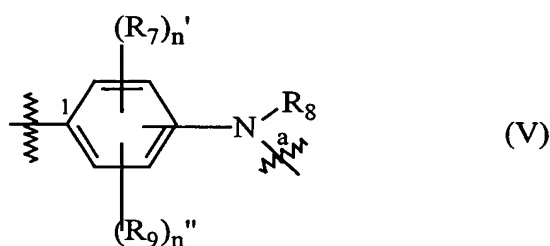
R_1 , R_3 and R_5 represent, independently of each other, a saturated or unsaturated, linear or branched C_1 - C_{10} hydrocarbon-based chain which can form an optionally aromatic, 5- to 7-membered carbon-based ring; one or more carbon atoms possibly being replaced with an oxygen, nitrogen, halogen or sulphur atom or with an SO_2 group, with the exception of the carbon linked to the nitrogen atom of the ring of formula (III)

or (IV); the radicals R_1 , R_3 or R_5 not comprising a peroxide bond or diazo, nitro or nitroso radicals;

R_2 , R_4 and R_6 represent, independently of each other, a hydrogen atom; a saturated or unsaturated, linear or branched C_1 - C_{10} hydrocarbon-based chain which can form an optionally aromatic, 5- to 7-membered carbon-based ring; one or more carbon atoms possibly being replaced with one or more oxygen, nitrogen or sulphur atoms, or with an SO_2 group; the radicals R_2 , R_4 or R_6 not comprising a peroxide bond or diazo, nitro or nitroso radicals; the radicals R_2 and R_4 can together form a carbon-based aromatic ring,

V represents an organic or mineral anion,

A_1 and A_3 represent, independently of each other, a divalent radical of formula (V) or (VI)



in which

n' is an integer equal to 0, 1, 2 or 3,

n'' is an integer equal to 0 or 1,

Y_1 - Y_2 represents C-N or N-N,

when $n = 0$, then the bond a of the group A_1 of formula (V) is linked to the function Z_2 of formula (Vf), or

when $n = 0$, then the bond b' of the group A_1 of formula (VI) is linked to the function Z_2 of formula (Vf),

when $n = 1$, then the bond a of the group A_1 of formula (V) is linked to C_1 of the group A_3 of formula (V), the bond a of the group A_3 of formula (V) being linked to the function Z_2 of formula (Vf), or

when $n = 1$, then the bond a of the group A_1 of formula (V) is linked to the carbon bearing the bond a' of the group A_3 of formula (VI), the bond b' being linked to the function Z_2 of formula (Vf),

when $n = 1$, then the bond b' of the group A_1 of formula (VI) is linked to the carbon C_1 of the group A_3 of formula (V), the bond a being linked to the function Z_2 of formula (Vf), or

when $n = 1$, then the bond b' of the group A_1 of formula (VI) is linked to the carbon bearing the bond a' of the group A_3 of formula (VI), the bond b' of the group A_3 of formula (VI) being linked to the function Z_2 of formula (Vf),

R_8 and R'_8 represent, independently of each other, a non-cationic group chosen from a hydrogen atom, a linear or branched C_1 - C_{10} hydrocarbon-based chain which can form an optionally aromatic 5- to 7-membered carbon-based ring; one or more carbon atoms of the hydrocarbon-based chain possibly being replaced with one or more oxygen, nitrogen or sulphur atoms or with an SO_2 group, with the exception of the carbon linked to the nitrogen atom; the radicals R_8 or R'_8 not comprising a peroxide bond or diazo, nitro or nitroso radicals;

R_7 , R_9 , R'_7 and R'_9 represent, independently of each other, a non-cationic group as defined for R_2 or a cationic group Z_3 , with the condition that only one of the groups R_7 , R_9 , R'_7 and R'_9 is cationic

R_7 with R_8 , or R'_7 with R'_8 , can together form a saturated 5- or 6-membered heterocycle,

Z_3 is a cationic group represented by formula (VII) below



in which:

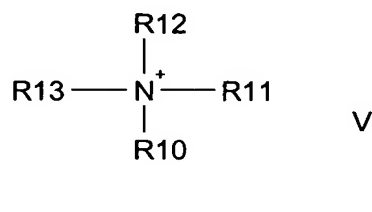
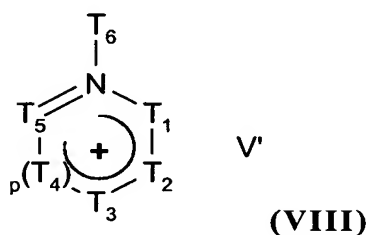
B represents a linear or branched hydrocarbon-based chain

containing from 1 to 15 carbon atoms, which can form one or more optionally aromatic 3- to 7-membered rings, and one or more carbon atoms of which may be replaced with an oxygen, nitrogen or sulphur atom or with an SO₂ radical, with the exception of the carbon linked to the nitrogen atom; B not comprising a peroxide bond or diazo, nitro or nitroso radicals,

the radical B is linked to D via any of the atoms of the radical D,

n''' can take the value 0 or 1,

D is chosen from the cationic groups of formulae (VIII) and (IX) below:



in which:

p can take the value 0 or 1;

T₁, T₂, T₃ and T₄, independently of each other, represent an oxygen atom; a sulphur atom; a nitrogen atom which is unsubstituted or substituted with a radical R₁₄; or a carbon atom which is unsubstituted or substituted with one or two radicals R₁₄, which may be identical or different;

T₅ represents a nitrogen atom; or a carbon atom which is unsubstituted or substituted with a radical R₁₄;

T₆ can take the same meanings as those given below for the radical R₁₄, it being understood that T₆ is other than a hydrogen atom;

T₁ or T₅ can also form with T₆ a saturated or unsaturated 5- to 7-membered ring, each ring member being unsubstituted or substituted with one or two radicals R₁₄, which may be identical or different;

two of the adjacent radicals T₁, T₂, T₃, T₄ and T₅ can also form a 5- to 7-membered ring, each ring member being independently represented by a carbon atom which is unsubstituted or substituted with one or two radicals R₁₄, which may be identical or different, a nitrogen atom which is unsubstituted or substituted with a radical R₁₄, an oxygen atom or a sulphur atom;

R₁₀, R₁₁, R₁₂, R₁₃ and R₁₄, which may be identical or different, represent a hydrogen atom; a linear or branched, optionally aromatic hydrocarbon-based chain containing from 1 to 10 carbon atoms, and one or more carbon atoms of which may be replaced with an oxygen, nitrogen or sulphur atom or with an SO₂ group, and one or more carbon atoms of which may, independently of each other, be substituted with one or more halogen atoms; the said radical not comprising a peroxide bond or diazo, nitro or nitroso radicals;

R₁₀, R₁₁ and R₁₂ can also form, in pairs, with the quaternary nitrogen atom to which they are attached, one or more saturated 5- to 7-membered rings, each ring member being independently represented by a carbon atom which is unsubstituted or substituted with one or two radicals R₁₄, which may be identical or different, a nitrogen atom, which is unsubstituted or substituted with a radical R₁₄, an oxygen atom or a sulphur atom,

when n''' = 0, then the group of formula (IX) may be linked to the compound of formulae (V) and (VI) directly via the nitrogen atom of the quaternary ammonium, R₁₃ in this case representing a single bond,

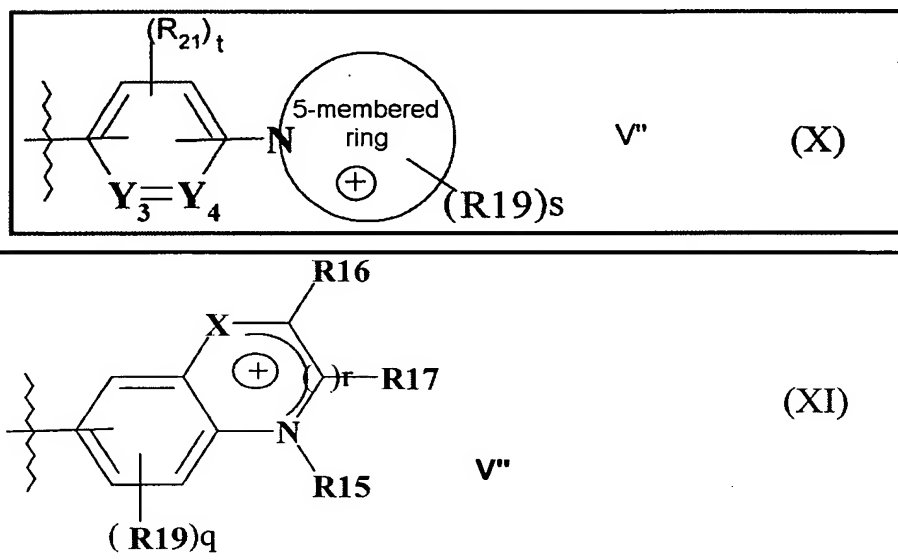
V' represents an organic or mineral anion,

Z₂ represents a linear or branched C₁-C₁₀ hydrocarbon-based chain which can form an optionally aromatic 5- to 7-membered carbon-based ring; one or more carbon atoms possibly being replaced with one or more oxygen, nitrogen or sulphur atoms or with an SO₂ group, the said radical Z₂ not comprising a

peroxide bond or diazo, nitro or nitroso radicals; a cationic group Z_3 as defined above,

with the proviso that Z_2 is not cationic when R_7 , R_9 , R_7' or R_9' is cationic,

A_2 represents a radical of formula (X) corresponding to a carbon-based aromatic, pyridine or pyridazine radical substituted with a 5-membered cationic heteroaromatic radical, optionally substituted with one or more radicals R_{19} of the same definition as R_2 ; a radical of formula (XI):



in which

r is an integer equal to 0 or 1,

q is an integer equal to 0, 1, 2 or 3,

s is an integer equal to 0, 1, 2, 3, 4 or 5,

t is an integer equal to 0, 1 or 2.

$Y_3=Y_4$ represents $C=C$, $C=N$ or $N=N$,

if $r = 0$, then X represents O , S , NR_{18} or CR_{20} ,

if $r = 1$, then X represents CR_{20} ,

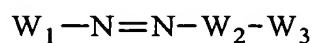
R_{15} and R_{18} have the same definition as R_1 defined above,

R_{16} , R_{17} , R_{19} , R_{20} and R_{21} have the same definition as R_2 defined above,

V'' represents an organic or mineral anion,

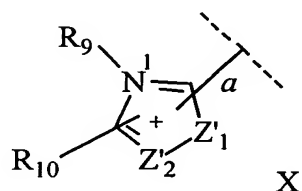
with the condition that in formula (Vf) one of the groups A_1 , Z_2 and A_3 is a cationic group.

37. The composition of claim 28, wherein the dye is a monocationic monoazo dye of formula (Vh)



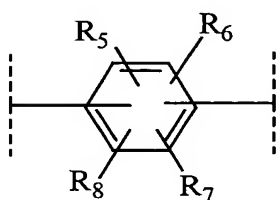
in which

W_1 represents a 5-membered cationic aromatic heterocycle of formula (II) below

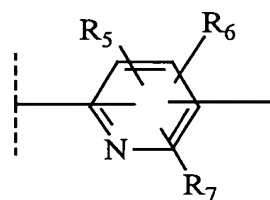


formula (II)

W_2 represents a divalent carbon-based aromatic or pyridine group of formula (III) or (IV) below

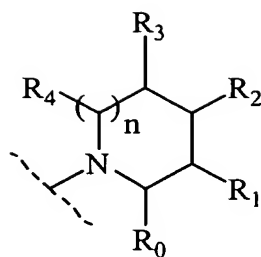


formula (III)



formula (IV)

- W_3 represents a 5- or 6-membered heterocycle of formula (V) below



formula (V)

in which formulae

Z_1 represents an oxygen or sulphur atom or a radical NR_{12} ,

Z_2 represents a nitrogen atom or a radical CR_{11} ,

R_9 and R_{12} represent, independently of each other, a C_1 - C_8 alkyl radical, optionally substituted with one or more radicals chosen from a hydroxyl, a C_1 - C_2 alkoxy, a C_2 - C_4 (poly)hydroxyalkoxy radical, an amino, a C_1 - C_2 (di)alkylamino, a carboxyl or a sulphonic radical; an optionally substituted phenyl radical,

R_{10} and R_{11} represent, independently of each other, a hydrogen atom; a C_1 - C_4 alkyl radical, optionally substituted with one or more radicals chosen from a hydroxyl, a C_1 - C_2 alkoxy, a C_2 - C_4 (poly)hydroxyalkoxy, an amino, a C_1 - C_2 (di)alkylamino, a carboxyl or a sulphonic radical; an optionally substituted phenyl radical; a carboxyl radical; a sulphonylamino radical;

R_5 , R_6 , R_7 and R_8 represent, independently of each other, a hydrogen atom; a chlorine atom; a bromine atom; a linear or branched C_1 - C_6 hydrocarbon-based chain, which can form one or more 3- to 6-membered carbon-based rings, and which may be saturated or unsaturated, one or more carbon atoms of the carbon-based chain of which may be replaced with an oxygen, nitrogen or sulphur atom or with an SO_2 group, and the carbon atoms of which may, independently of each other, be substituted with one or more halogen atoms; R_5 , R_6 , R_7 and R_8 not comprising a peroxide bond or diazo or nitroso radicals,

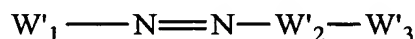
n is an integer equal to 0 or 1,

R_0 , R_1 , R_2 , R_3 and R_4 represent, independently of each other, a hydrogen atom, a hydroxyl radical; amino; acetoxy; a group $-NR_{13}R_{14}$, R_{13} and R_{14} representing, independently of each other, a hydrogen atom, a C_1 - C_4 alkyl radical substituted with one or more radicals chosen from a halogen atom, a hydroxyl, C_1 - C_2 alkoxy, amino or C_1 - C_2 amino(di)alkyl radical; a sulphonylamino radical; a carboxyl radical; a carboxamido radical; an amido radical; a mono- or dialkylamido radical; a halogen; a C_1 - C_6 alkyl radical substituted with one or more radicals chosen from a hydroxyl, C_1 - C_2 alkoxy, C_2 - C_4 (poly)hydroxyalkoxy, amino or C_1 - C_2 (di)alkylamino radical,

it being understood that at least one of the groups R_0 , R_1 , R_2 , R_3 and R_4 is other than hydrogen,

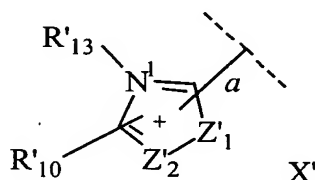
X is an organic or mineral anion.

38. The composition of claim 28, wherein the dye is a monocationic monoazo dye of formula (Vi)



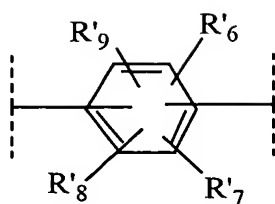
in which

W'_1 represents a 5-membered cationic aromatic heterocycle of formula (II') below

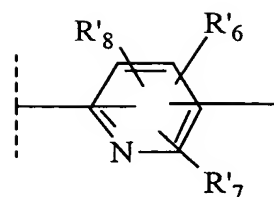


formula (II')

W'_2 represents a divalent carbon-based aromatic or pyridine group of formula (III') or (IV') below

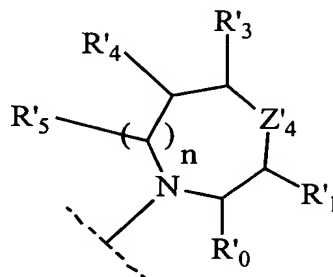


(III')



(IV')

W₃ represents a 7- or 8-membered heterocycle of formula (V') below :



formula (V')

in which formulae

Z₁ represents an oxygen or sulphur atom or a radical NR'₁₂,

Z₂ represents a nitrogen atom or a radical CR'₁₁,

R'₁₂ and R'₁₃ represent, independently of each other, a C₁-C₈ alkyl radical, optionally substituted with one or more radicals chosen from a hydroxyl, a C₁-C₂ alkoxy, a C₂-C₄ (poly)hydroxyalkoxy, an amino, a C₁-C₂ (di)alkylamino, a carboxyl or a sulphonic radical; an optionally substituted phenyl radical,

R'₁₀ and R'₁₁ represent, independently of each other, a hydrogen atom; a C₁-C₄ alkyl radical, optionally substituted with one or more radicals chosen from a hydroxyl, a C₁-C₂ alkoxy, a C₂-C₄ (poly)hydroxyalkoxy, an amino, a C₁-C₂ (di)alkylamino, a carboxyl or a sulphonic radical; an optionally substituted phenyl radical; a carboxyl radical; a sulphonylamino radical;

R'₆, R'₇, R'₈ and R'₉ represent, independently of each other, a hydrogen atom; a chlorine atom; a bromine atom; a linear or branched C₁-C₆ hydrocarbon-based chain, which can form one or more 3- to 6-membered carbon-based rings, and which may be saturated or unsaturated, one or more carbon

atoms of the carbon-based chain of which may be replaced with an oxygen, nitrogen or sulphur atom or with an SO₂ group, and the carbon atoms of which may, independently of each other, be substituted with one or more halogen atoms; R'₆, R'₇, R'₈ and R'₉ not comprising a peroxide bond or diazo or nitroso radicals,

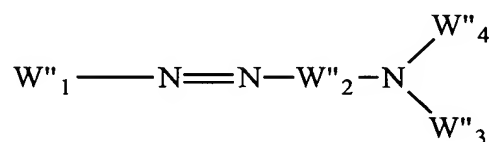
n is an integer equal to 1 or 2,

Z'₄ represents an oxygen or sulphur atom, a radical NR'₂ or a radical CR'₂R''₂,

R'₀, R'₁, R'₂, R''₂, R'₃, R'₄ and R'₅ represent, independently of each other, a hydrogen atom; an alkyl radical; an alkoxy radical; a hydroxyl radical; amino; acetoxy; a group –NR₁₄R₁₅, R₁₄ and R₁₅ representing, independently of each other, a hydrogen atom, a C₁-C₄ alkyl radical substituted with one or more radicals chosen from a halogen atom, a hydroxyl, C₁-C₂ alkoxy, amino or C₁-C₂ amino(di)alkyl radical; a sulphonylamino radical; a carboxyl radical; a carboxamido radical; an amido radical; a mono- or dialkylamido radical; a halogen; a C₁-C₆ alkyl radical substituted with one or more radicals chosen from a hydroxyl, C₁-C₂ alkoxy, C₂-C₄ (poly)hydroxyalkoxy, amino, or C₁-C₂ (di)alkylamino radical,

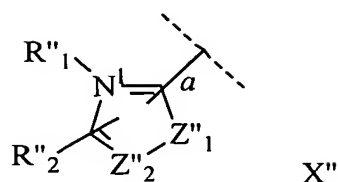
X' is an organic or mineral anion.

39. The composition of claim 28, wherein the dye is a monocationic monoazo dye of formula (Vj)



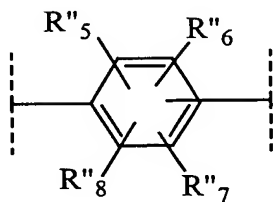
in which

W''₁ represents a 5-membered cationic aromatic heterocycle of formula (II'') below:

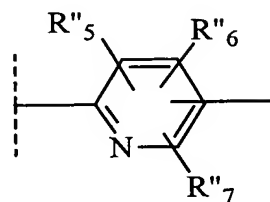


formula (II'')

W''₂ represents a divalent carbon-based aromatic or pyridine group of formula (III'') or (IV'') below



formula (III'')



formula (IV'')

in which formulae

Z''₁ represents an oxygen or sulphur atom or a radical NR''₄,

Z''₂ represents a nitrogen atom or a radical CR''₃,

R''₁ and R''₄ represent, independently of each other, a C₁-C₈ alkyl radical, optionally substituted with one or more radicals chosen from a hydroxyl, a C₁-C₂ alkoxy, a C₂-C₄ (poly)hydroxyalkoxy radical, an amino, a C₁-C₂ (di)alkylamino, a carboxyl or a sulphonic radical; an optionally substituted phenyl radical,

R''₂ and R''₃ represent, independently of each other, a hydrogen atom; a C₁-C₄ alkyl radical, optionally substituted with one or more radicals chosen from a hydroxyl, a C₁-C₂ alkoxy, a C₂-C₄ (poly)hydroxyalkoxy, an amino, a C₁-C₂ (di)alkylamino, a carboxyl or a sulphonic radical; an optionally substituted phenyl radical; a carboxyl radical; a sulphonylamino radical;

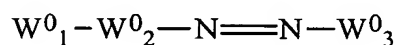
R''₅, R''₆, R''₇, R''₈ and W''₄ represent, independently of each other, a hydrogen atom; a chlorine atom; a bromine atom; a linear or branched C₁-C₆ hydrocarbon-based chain, which can form one or more 3- to 6-membered

carbon-based rings, and which may be saturated or unsaturated, one or more carbon atoms of the hydrocarbon-based chain of which may be replaced with an oxygen, nitrogen or sulphur atom or with an SO₂ group, and the carbon atoms of which may, independently of each other, be substituted with one or more halogen atoms; R"₅, R"₆, R"₇, R"₈ and W"₄ not comprising a peroxide bond or diazo or nitroso radicals, and W"₄ being a non-aromatic substituent,

W"₃ represents a thienyl, pyrazolyl, pyrrolyl, imidazolyl, furyl, triazolyl, thiadiazolyl, isoxazolyl, isothiazolyl, thiazolyl, oxazolyl, pyridyl, pyrimidinyl, triazinyl, pyridazinyl or pyrazinyl radical, each of these heteroaromatic rings possibly being substituted with at least one C₁-C₆ alkyl radical, optionally substituted with one or more hydroxyl, C₁-C₄ alkoxy, (poly)hydroxyalkoxy, amino, C₁-C₄ (di)alkylamino, C₂-C₄ (poly)hydroxyalkylamino, carboxyl, sulphonyl, alkoxycarbonyl or C₁-C₄ thioether radicals; a phenyl radical optionally substituted with one or more radicals chosen from C₁-C₂ alkoxy, amino, C₁-C₂ (di)alkylamino, carboxyl, sulphonyl, C₁-C₄ alkyl, halogen or C₁-C₂ thioether radicals, a halogen such as a chlorine, fluorine or bromine atom; an amino radical; a C₁-C₄ alkylamino radical, a C₂-C₄ (poly)hydroxyalkylamino radical, a C₁-C₄ (di)alkylamino radical; a C₁-C₂ alkoxy radical; a carboxyl radical; a sulphonylamino radical,

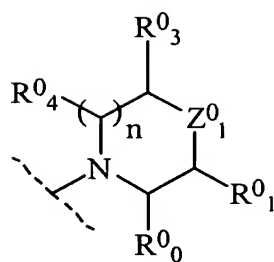
X" is an organic or mineral anion.

40. The composition of claim 28, wherein the dye is a monocationic monoazo dye of formula (Vk)



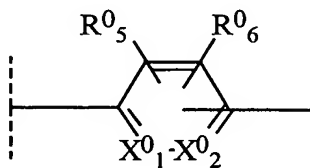
in which

W⁰₁ represents a 5-, 6-, 7- or 8-membered heterocycle of formula (II⁰) below



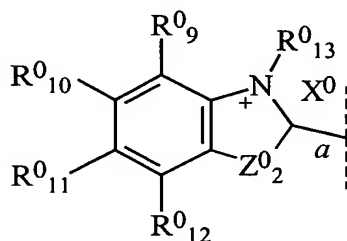
formula (II⁰)

W⁰₂ represents a divalent carbon-based aromatic, pyridine or pyridazine group of formula (III⁰) below



formula (III⁰)

W⁰₃ represents a cationic heteroaromatic radical represented by formula (IV⁰) below:



(IV⁰)

in which formulae (II⁰), (III⁰) and (IV⁰):

n = 0, 1, 2 or 3, it being understood that when n is greater than or equal to 2, then the radicals R⁰₄ may be identical or different,

X⁰₁ represents a nitrogen atom or a radical CR⁰₇,

X⁰₂ represents a nitrogen atom or a radical CR⁰₈,

Z⁰₁ represents a radical CHR⁰₂, an oxygen or sulphur atom or a radical NR⁰₁₄,

Z^0_2 represents an oxygen or sulphur atom or a radical NR^0_{15}

$R^0_0, R^0_1, R^0_2, R^0_3, R^0_4, R^0_5, R^0_6, R^0_7, R^0_8, R^0_9, R^0_{10}, R^0_{11}$ and R^0_{12} , which may be identical or different, represent a hydrogen atom, a linear or branched C_1 - C_{10} hydrocarbon-based chain, which can form one or more 3- to 6-membered carbon-based rings, and which may be saturated or unsaturated, one or more carbon atoms of the carbon-based chain of which may be replaced with an oxygen, nitrogen or sulphur atom or with an SO_2 group, and the carbon atoms of which may be, independently of each other, substituted with one or more halogen atoms; $R^0_0, R^0_1, R^0_2, R^0_3, R^0_4, R^0_5, R^0_6, R^0_7, R^0_8, R^0_9, R^0_{11}$ and R^0_{12} not comprising a peroxide bond or diazo or nitroso radicals,

R^0_{14} represents a hydrogen atom, a linear or branched C_1 - C_{10} hydrocarbon-based chain, which can form one or more 3- to 6-membered carbon-based rings, and which may be saturated or unsaturated, one or more carbon atoms of the carbon-based chain of which may be replaced with an oxygen, nitrogen or sulphur atom or with an SO_2 group, and the carbon atoms of which may be, independently of each other, substituted with one or more halogen atoms, R^0_{14} not comprising a peroxide bond or diazo or nitroso radicals; it being understood that the said oxygen, nitrogen and sulphur atoms are not directly linked to the nitrogen atom bearing the radical R^0_{14} ,

R^0_5 with R^0_6 can form a carbon-based aromatic ring, such as a phenyl,

R^0_{13} and R^0_{15} , which may be identical or different, represent a C_1 - C_8 alkyl radical, optionally substituted with one or more radicals chosen from the group consisting of a hydroxyl, a C_1 - C_2 alkoxy, a C_2 - C_4 (poly)hydroxyalkoxy, an amino, a C_1 - C_2 (di)alkylamino, a carboxyl, a sulphonic or an optionally substituted phenyl radical;

the bond a of the cationic ring of formula (IV) is linked to the azo group of formula (I);

X^0 is an organic or mineral anion.

41. The composition of claim 40, wherein the dye is a monocationic monoazo dye of formula (Vk) selected from the group consisting of:

1,3-dimethyl-2-[4-(pyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(3-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(2-carboxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(3-aminopyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(2-carboxy-3-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(2-carboxamidopyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(2-hydroxymethylpyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(2-carboxy-4-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(piperidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(3-hydroxypiperidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(3-hydroxymethylpiperidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(3-carboxypiperidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(2-carboxypiperidin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(piperazin-1-yl)phenylazo]benzimidazol-1-ium,

1,3-dimethyl-2-[4-(homopiperazin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(pyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(3-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(2-carboxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(3-aminopyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(2-carboxy-3-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(2-carboxamidopyrrolidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(2-hydroxymethylpyrrolidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(2-carboxy-4-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(piperidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(3-hydroxypiperidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(3-hydroxymethylpiperidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(3-carboxypiperidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(2-carboxypiperidin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(piperazin-1-yl)phenylazo]benzimidazol-1-ium,

5-amino-1,3-dimethyl-2-[4-(homopiperazin-1-yl)phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(pyrrolidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(3-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(2-carboxypyrrolidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(3-aminopyrrolidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(2-carboxy-3-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(2-carboxamidopyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(2-hydroxymethylpyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(2-carboxy-4-hydroxypyrrolidin-1-yl)phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(piperidin-1-yl)phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(3-hydroxypiperidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(3-hydroxymethylpiperidin-1-yl)phenylazo]benzimidazol-1-ium,

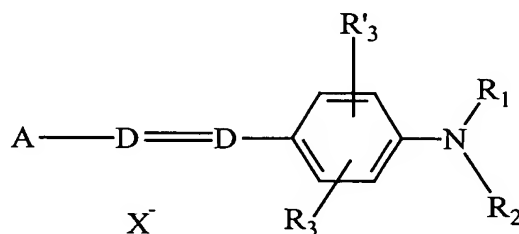
5-dimethylamino-1,3-dimethyl-2-[4-(3-carboxypiperidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(2-carboxypiperidin-1-yl)-phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(piperazin-1-yl)phenylazo]benzimidazol-1-ium,

5-dimethylamino-1,3-dimethyl-2-[4-(homopiperazin-1-yl)-phenylazo]benzimidazol-1-ium.

42. The composition of claim 28, wherein the dye is a monocationic monoazo dye of formula (VI)



in which:

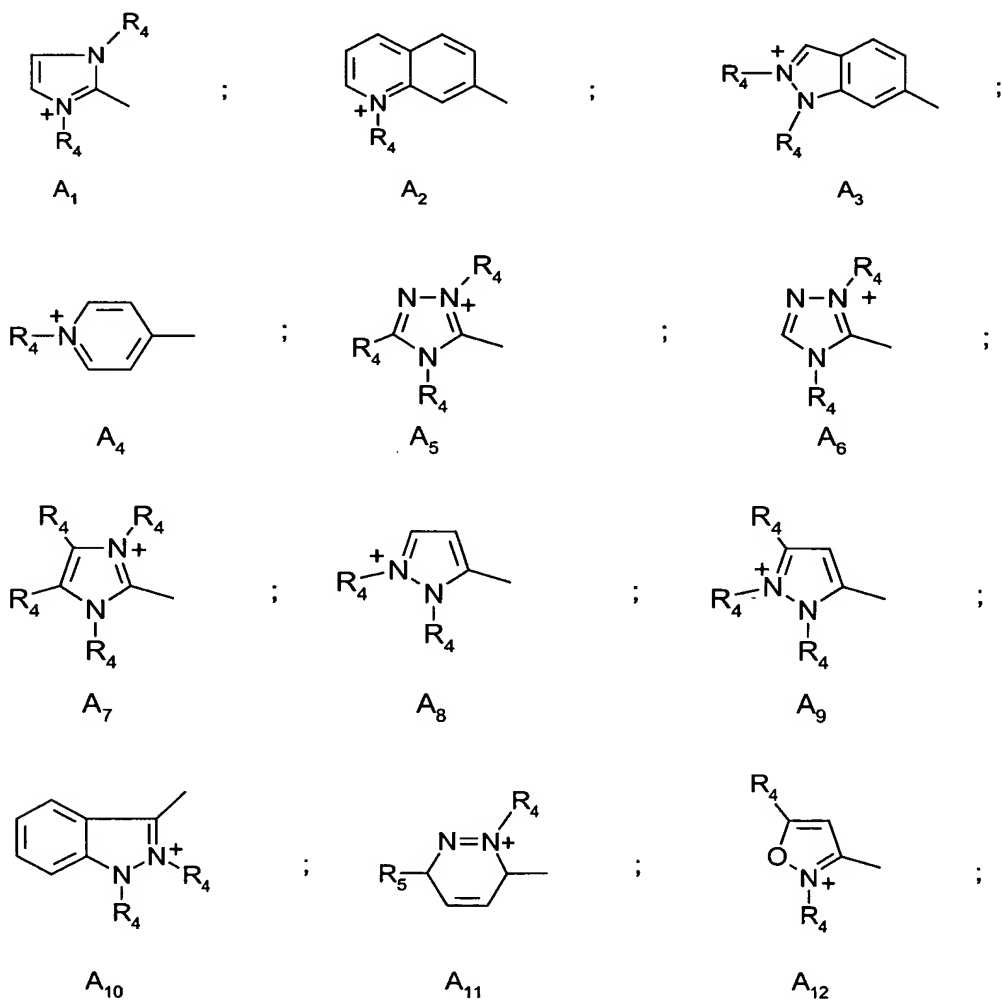
D represents a nitrogen atom or a -CH group,

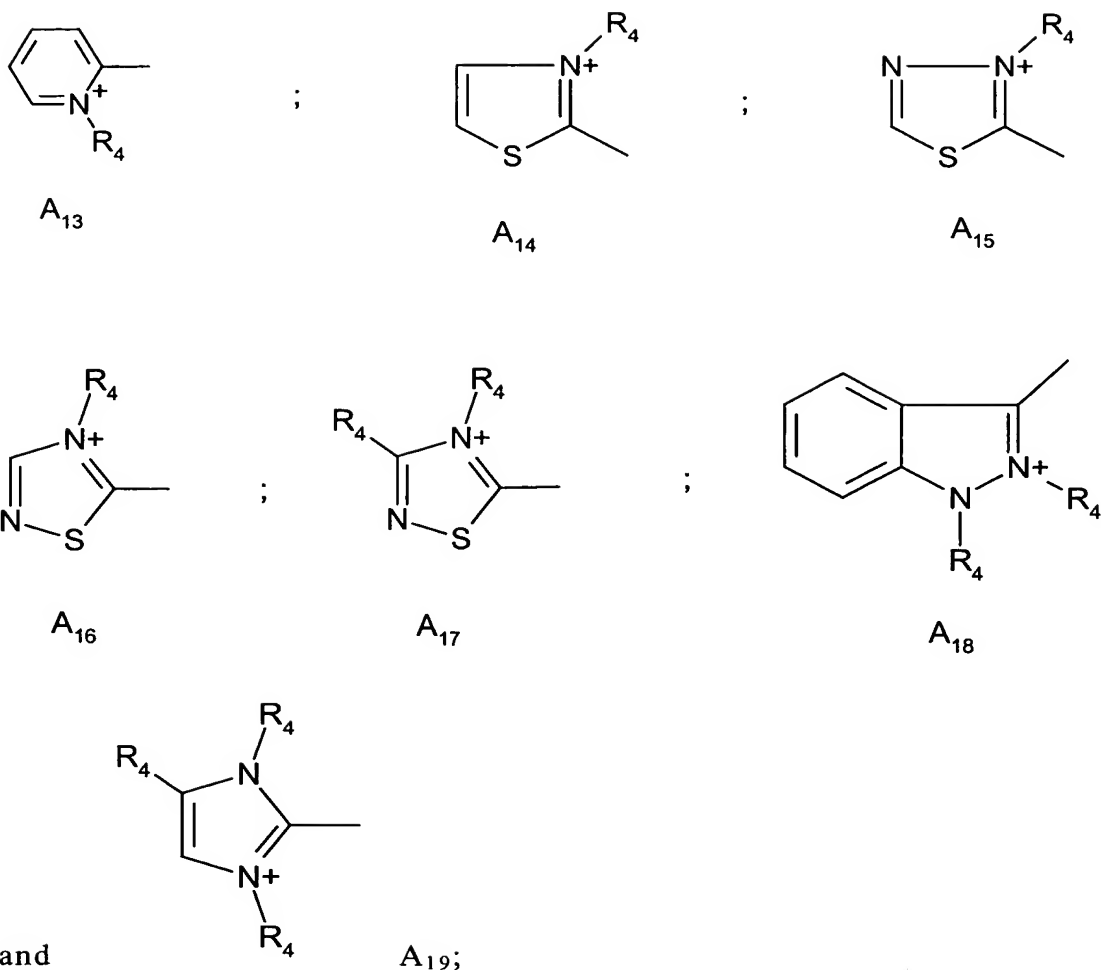
R_1 and R_2 , which may be identical or different, represent a hydrogen atom; a C_1 - C_4 alkyl radical which may be substituted with a $-CN$, $-OH$ or $-NH_2$ radical or form, with a carbon atom of the benzene ring, a heterocycle optionally containing oxygen or nitrogen, which may be substituted with one or more C_1 - C_4 alkyl radicals; a 4'-aminophenyl radical,

R_3 and R'_3 , which may be identical or different, represent a hydrogen atom, a halogen atom chosen from chlorine, bromine, iodine and fluorine, or a cyano, C_1 - C_4 alkoxy or acetyloxy radical,

X^- represents an anion preferably chosen from chloride, methyl sulphate and acetate,

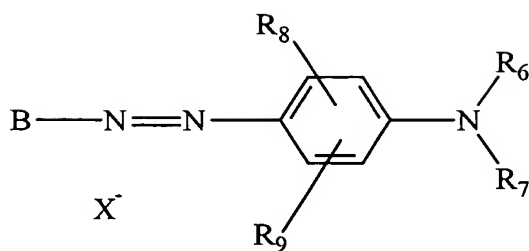
A represents a group chosen from structures A1 to A19 below:





in which R_4 represents a C_1 - C_4 alkyl radical which may be substituted with a hydroxyl radical and R_5 represents a C_1 - C_4 alkoxy radical, with the proviso that when D represents -CH, A represents A_4 or A_{13} and R_3 is other than an alkoxy radical, then R_1 and R_2 do not simultaneously denote a hydrogen atom.

43. The composition of claim 28, wherein the dye is a monocationic monoazo dye of formula (Vm)



in which:

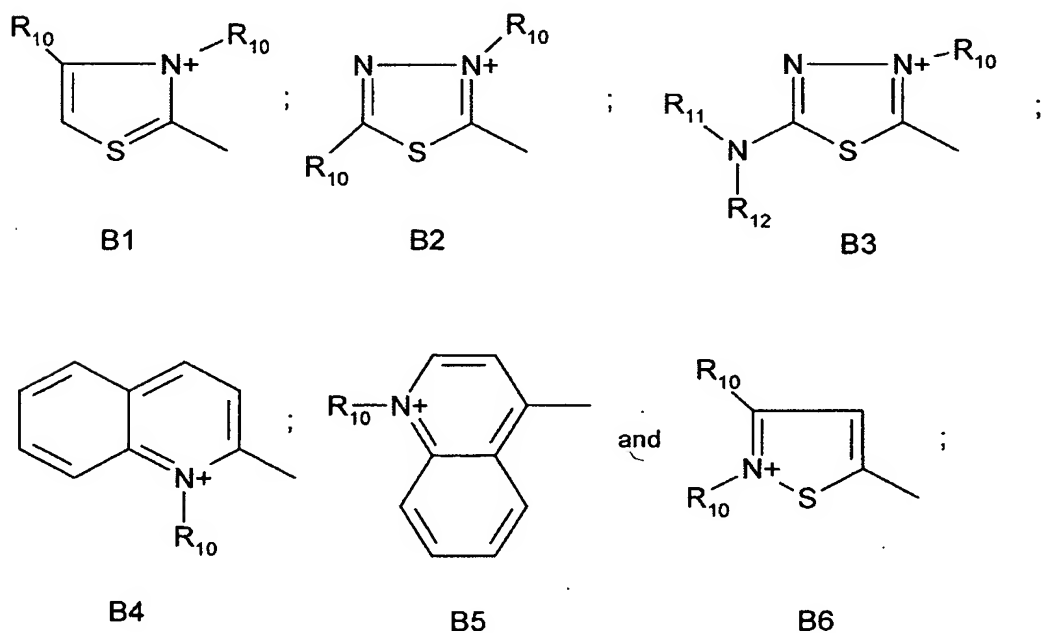
R_6 represents a hydrogen atom or a C_1 - C_4 alkyl radical,

R_7 represents a hydrogen atom, an alkyl radical which may be substituted with a -CN radical or with an amino group, a 4'-aminophenyl radical or forms with R_6 a heterocycle optionally containing oxygen and/or nitrogen, which may be substituted with a C_1 - C_4 alkyl radical,

R_8 and R_9 , which may be identical or different, represent a hydrogen atom, a halogen atom such as bromine, chlorine, iodine or fluorine, a C_1 - C_4 alkyl or C_1 - C_4 alkoxy radical or a -CN radical,

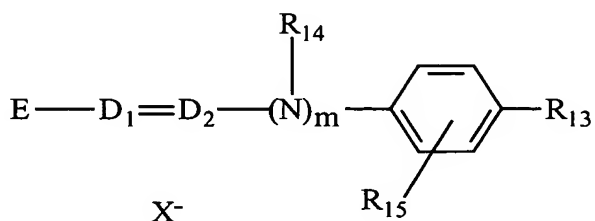
X^- represents an anion preferably chosen from chloride, methyl sulphate and acetate,

B represents a group chosen from structures B1 to B6 below:

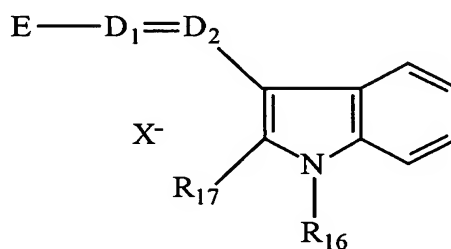


in which R₁₀ represents a C₁-C₄ alkyl radical, R₁₁ and R₁₂, which may be identical or different, represent a hydrogen atom or a C₁-C₄ alkyl radical.

44. The composition of claim 28, wherein the dye is a monocationic monoazo dye of formula (Vn) or (Vo)



(Vn)



(Vo)

in which:

R₁₃ represents a hydrogen atom, a C₁-C₄ alkoxy radical, a halogen atom such as bromine, chlorine, iodine or fluorine, or an amino radical,

R₁₄ represents a hydrogen atom, a C₁-C₄ alkyl radical or forms with a carbon atom of the benzene ring a heterocycle optionally containing oxygen and/or substituted with one or more C₁-C₄ alkyl groups,

R₁₅ represents a hydrogen atom or a halogen atom such as bromine, chlorine, iodine or fluorine,

R₁₆ and R₁₇, which may be identical or different, represent a hydrogen atom or a C₁-C₄ alkyl radical,

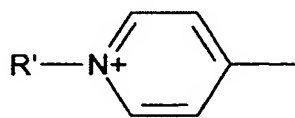
D_1 and D_2 , which may be identical or different, represent a nitrogen atom or a -CH group,

$m = 0$ or 1 ,

it being understood that when R_{13} represents an unsubstituted amino group, then D_1 and D_2 simultaneously represent a -CH group and $m = 0$,

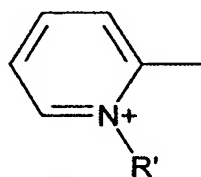
X^- represents an anion preferably chosen from chloride, methyl sulphate and acetate,

E represents a group chosen from structures E1 to E8 below:



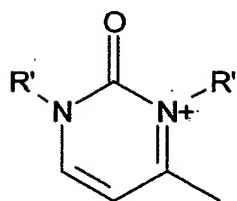
E1

;



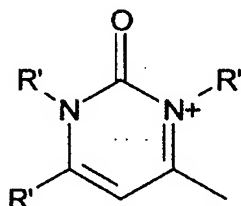
E2

;



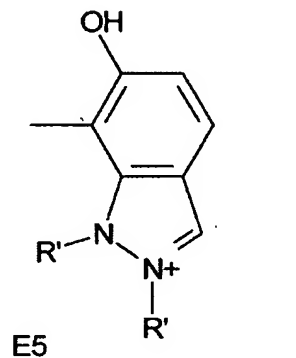
E3

;



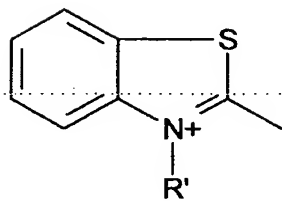
E4

;



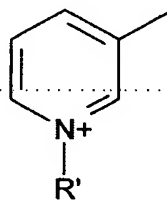
E5

;



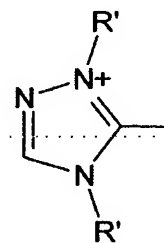
E6

;



E7

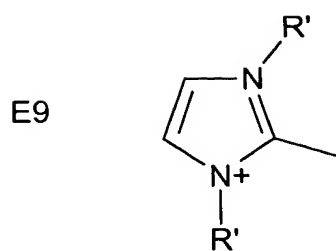
and



E8

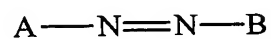
in which R' represents a C_1 - C_4 alkyl radical;

when $m = 0$ and when D_1 represents a nitrogen atom, then E may also denote a group of structure E9 below:



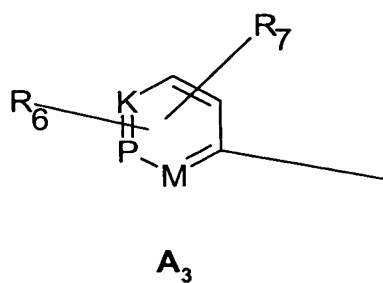
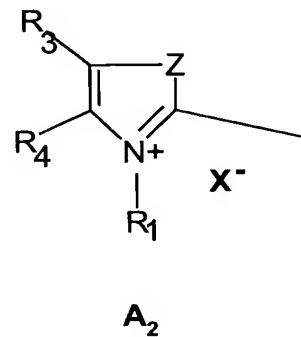
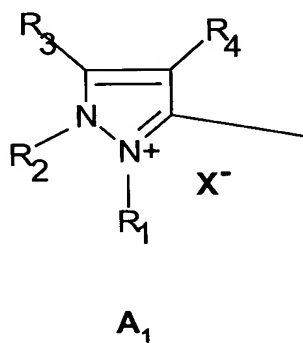
in which R' represents a C₁-C₄ alkyl radical.

45. The composition of claim 28, wherein the dye is a monocationic monoazo dye of formula (Vp)



in which:

the symbol A represents a group chosen from structures A1 to A3 below:



in which structures A1 to A3,

R_1 denotes a C_1 - C_4 alkyl radical, a phenyl radical which may be substituted with a C_1 - C_4 alkyl radical or a halogen atom chosen from chlorine, bromine, iodine and fluorine;

R_2 denotes a C_1 - C_4 alkyl radical or a phenyl radical;

R_3 and R_4 , which may be identical or different, represent a C_1 - C_4 alkyl radical, a phenyl radical or, in the case of structure A1, may together form a substituted benzene ring, and in the case of structure A2, may together form a benzene ring optionally substituted with one or more C_1 - C_4 alkyl, C_1 - C_4 alkoxy or NO_2 radicals;

R_3 may also denote a hydrogen atom;

Z denotes an oxygen or sulphur atom or a group $-NR_2$;

M represents a group $-CH$, $-CR$ (R denoting C_1 - C_4 alkyl),
or $-NR_5(X^-)_r$;

K represents a group $-CH$, $-CR$ (R denoting C_1 - C_4 alkyl),
or $-NR_5(X^-)_r$;

P represents a group $-CH$, $-CR$ (R denoting C_1 - C_4 alkyl),
or $-NR_5(X^-)_r$; r denotes zero or 1;

R_5 represents an atom O^- , a C_1 - C_4 alkoxy radical or a C_1 - C_4 alkyl radical;

R_6 and R_7 , which may be identical or different, represent a hydrogen atom or a halogen atom chosen from chlorine, bromine, iodine and fluorine, a C_1 - C_4 alkyl radical, a C_1 - C_4 alkoxy radical or an $-NO_2$ radical;

X^- represents an anion preferably chosen from chloride, iodide, methyl sulphate, ethyl sulphate, acetate and perchlorate;

with the proviso that,

if R_4 denotes a C_1 - C_4 alkyl radical and Z denotes a sulphur atom, then R_3 does not denote a hydrogen atom;

if R_5 denotes O^- , then r denotes zero;

if K or P or M denote N-(C₁-C₄)alkyl X⁻, then R₆ or R₇ is other than a hydrogen atom;

if K denotes -NR₅(X⁻)_r, then M = P = -CH₂; -CR₂;

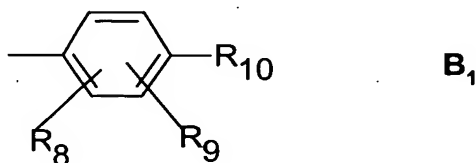
if M denotes -NR₅(X⁻)_r, then K = P = -CH₂; -CR₂;

if P denotes -NR₅(X⁻)_r, then K = M and denote -CH₂ or -CR₂;

if Z denotes -NR₂ and R₂ denotes a C₁-C₄ alkyl radical, then at least one of the radicals R₁, R₃ or R₄ of A₂ is other than a C₁-C₄ alkyl radical;

the symbol B represents:

(a) a group of structure B₁ below:



in which structure B₁,

R₈ represents a hydrogen atom, a halogen atom chosen from chlorine, bromine, iodine and fluorine, a C₁-C₄ alkyl or C₁-C₄ alkoxy radical, a radical -OH, -NO₂, -NHR₁₁, -NR₁₂R₁₃ or -NHCO-(C₁-C₄) alkyl, or forms with R₉ a 5- or 6-membered ring optionally containing one or more heteroatoms chosen from nitrogen, oxygen or sulphur;

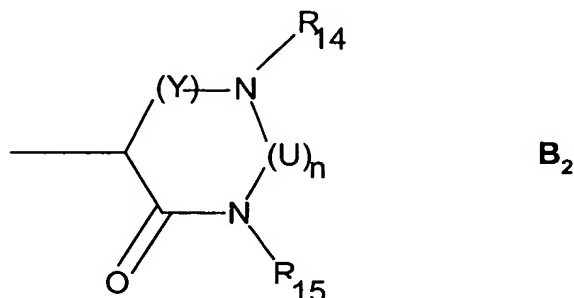
R₉ represents a hydrogen atom, a halogen atom chosen from chlorine, bromine, iodine and fluorine, or a C₁-C₄ alkyl or C₁-C₄ alkoxy radical, or forms with R₁₀ or R₁₁ a 5- or 6-membered ring optionally containing one or more heteroatoms chosen from nitrogen, oxygen or sulphur;

R₁₀ represents a hydrogen atom, an -OH radical, a radical -NHR₁₁ or a radical -NR₁₂R₁₃;

R₁₁ represents a hydrogen atom, a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical, a C₂-C₄ polyhydroxyalkyl radical or a phenyl radical;

R₁₂ and R₁₃, which may be identical or different, represent a C₁-C₄ alkyl radical, a C₁-C₄ monohydroxyalkyl radical or a C₂-C₄ polyhydroxyalkyl radical;

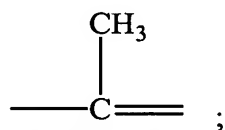
(b) a 5- or 6-membered nitrogeous heterocyclic group which may contain other heteroatoms and/or carbonyl groups and which may be substituted with one or more C₁-C₄ alkyl, amino or phenyl radicals, and especially a group of structure B₂ below:



in which structure B₂,

R₁₄ and R₁₅, which may be identical or different, represent a hydrogen atom, a C₁-C₄ alkyl radical or a phenyl radical;

Y denotes the -CO- radical or the radical



n = 0 or 1 with, when n denotes 1, U denotes the -CO radical.

46. The composition of claim 1, wherein the heterocyclic group is chosen from imidazolium and pyridinium rings substituted with one or more alkyl groups.
47. The composition of claim 1, wherein the monocationic monoazo direct dye is chosen from Basic Red 22, Basic Red 51, Basic Orange 31 and Basic Yellow 87.
48. The composition of claim 1, wherein the cationic dye comprising a heterocyclic group represents from 0.005% to 20%, preferably from 0.01% to 10% and even more preferably from 0.05% to 5% by weight relative to the total weight of the composition.
49. The composition of claim 1, wherein the cationic tertiary para-phenylenediamine(s) having a pyrrolidine ring represent from 0.001 to 10%, and preferably from 0.005 to 6% by weight relative to the total weight of the composition.
50. The composition of claim 1, wherein the composition further comprises at least one cationic polymer.

51. The composition of claim 1, wherein the composition further comprises at least one thickening polymer.
52. The composition of claim 1, wherein the composition further comprises at least one surfactant chosen from the group consisting of anionic surfactants, amphoteric or zwitterionic surfactants, nonionic surfactants and cationic surfactants.
53. The composition of claim 1, wherein the composition further comprises at least one additional oxidation base other than cationic tertiary para-phenylenediamines having a pyrrolidine ring chosen from para-phenylenediamines, bis-phenylalkylenediamines, para-aminophenols, ortho-aminophenols, heterocyclic bases and their addition salts.
54. The composition of claim 53, wherein the additional oxidation base(s) are present in a quantity of between 0.001 to 20% by weight and preferably between 0.005 and 6% by weight relative to the total weight of the composition.
55. The composition of claim 1, wherein the composition further comprises at least one coupler chosen from meta-phenylenediamines, meta-aminophenols, meta-diphenols, naphthalene couplers, heterocyclic couplers and their addition salts.
56. The composition of claim 55, wherein the coupler is chosen from 1,3-dihydroxybenzene, 1,3-dihydroxy-2-methylbenzene, 4-chloro-1,3-dihydroxybenzene, 2,4-diamino-1-(β -hydroxyethyloxy)benzene, 2-amino-4-(β -hydroxyethylamino)-1-methoxybenzene, 1,3-diaminobenzene, 1,3-bis(2,4-diaminophenoxy)propane, 3-ureidoaniline, 3-ureido-1-dimethylaminobenzene, sesamol, 1- β -hydroxyethylamino-3,4-methylenedioxybenzene, α -naphthol, 2-methyl-1-naphthol, 6-hydroxyindole, 4-hydroxyindole, 4-hydroxy-N-methylindole, 2-amino-3-hydroxypyridine, 6-hydroxybenzomorpholine, 3,5-diamino-2,6-dimethoxypyridine, 1-N-(β -hydroxyethyl)amino-3,4-methylenedioxybenzene, 2,6-bis(β -hydroxyethylamino)toluene and their addition salts.
57. The composition of claim 55, wherein the coupler(s) are present in a quantity of between 0.001 and 20% by weight relative to the total weight of the composition.
58. The composition of claim 1, wherein the composition further comprises at least one additional direct dye.

59. The composition of claim 1, wherein the composition further comprises at least one hydroxylated solvent such as ethanol, propylene glycol, glycerol, polyol monoethers.

60. The composition of claim 1, wherein the composition further comprises an oxidizing agent chosen from hydrogen peroxide, urea peroxide, alkali metal bromates, persalts, peracids and oxidase enzymes, and preferably hydrogen peroxide.

61. A method for oxidation dyeing of keratinous fibres, wherein a dyeing composition as defined in claim 1 is applied to the fibres in the presence of an oxidizing agent.

62. A multicompartment device comprising:

a first compartment comprising a dyeing composition for dyeing keratinous fibres, as defined in claim 1, and

a second compartment comprising an oxidizing agent.

63. A multicompartment device comprising:

a first compartment comprising a composition comprising a cationic tertiary para-phenylenediamine containing at least one pyrrolidine ring as defined in claim 1;

a second compartment comprising a composition comprising at least one cationic direct dye comprising at least one heterocyclic group as defined in claim 27; and

a third compartment comprising an oxidizing composition.